

WHAT IS CLAIMED:

15. A plurality of FRET hybridization probes comprising a first oligonucleotide carrying a FRET donor entity and a second oligonucleotide carrying a FRET acceptor entity,

wherein the oligonucleotide carrying the donor fluorescent entity is carrying at least one second entity, said second entity being a compound which is capable of quenching fluorescence emission of said donor fluorescent entity.

16. A pair of FRET hybridization probes according to claim 15,

wherein the same nucleotide residue of said first oligonucleotide carrying the donor fluorescent entity is carrying said second entity, which is capable of quenching fluorescence emission of said donor fluorescent entity.

17. A set of 3 oligonucleotides, comprising a first oligonucleotide and a second oligonucleotide capable of acting as a pair of amplification primers for a template dependent nucleic acid amplification reaction, further characterized in that said first oligonucleotide and a third oligonucleotide are each labeled with one corresponding member of a FRET pair consisting of a FRET donor entity and a FRET acceptor entity,

wherein the oligonucleotide carrying the FRET donor entity is carrying at least one second entity, said second entity being a compound which is capable of quenching fluorescence emission of said donor fluorescent entity.

18. A set of oligonucleotides according to claim 17,

wherein the same nucleotide residue of said first oligonucleotide carrying the FRET donor entity is carrying said second entity which is capable of quenching fluorescence emission of said donor fluorescent entity.

19. A composition comprising a nucleic acid sample and a pair of hybridization probes according to claim 15 or 16 or a set of oligonucleotides according to claim 18.

20. A kit comprising a pair of hybridization probes according to claim 15 or 16 or a set of oligonucleotides according to claim 17 or 18 and at least one other component selected

from a group consisting of a nucleic acid amplification primer a template dependent nucleic acid polymerase, at least one deoxynucleoside triphosphate and a buffer for template dependent nucleic acid amplification reaction.

21. A method for qualitative or quantitative detection of a nucleic acid sequence in a nucleic acid sample, comprising hybridizing said nucleic acid sample with a pair of FRET hybridization probes according to claim 15 or 16.
22. The method according to claim 21, further comprising amplifying at least a portion of said nucleic acid present in said sample which comprises a target nucleic acid sequence substantially complementary to the sequence of said hybridization probe according to claim 15 or 16 amplified by a template dependent nucleic acid amplification reaction.
23. A method for qualitative or quantitative detection of a target nucleic acid sequence in a nucleic acid sample, comprising amplifying the target nucleic acid sequence template dependent nucleic acid amplification using a primer pair according to said first and said second oligonucleotide of claim 17 or 18, and hybridization of the amplification product with said third oligonucleotide of claim 17 or 18.
24. The method according to claim 22, further comprising monitoring in real time fluorescence emission of either the donor fluorescent entity or emission of the acceptor fluorescent entity.
25. The method according to claim 23, further comprising monitoring in real time fluorescence emission of either the donor fluorescent entity or emission of the acceptor fluorescent entity.
26. Method according to claim 240, further comprising monitoring fluorescence emission of said FRET donor entity in a first detector channel and fluorescence emission of said FRET acceptor entity in a second detector channel, and normalizing the fluorescence emission of said FRET acceptor entity by the fluorescence emission of said FRET donor entity
27. Method according to claim 26, further comprising monitoring fluorescence emission of said FRET donor entity in a first detector channel and fluorescence emission of said FRET acceptor entity in a second detector channel, and normalizing the fluorescence emission of said FRET acceptor entity by the fluorescence emission of said FRET donor entity

28. A method for the determination of the melting profile of a hybrid comprising of a target nucleic acid and a pair of FRET hybridization probes according to claim 5 or 16, comprising measuring fluorescence emission as a function of temperature.
29. A method for the determination of the melting profile of a hybrid consisting of a target nucleic acid amplified according to claim 21, and said third oligonucleotide of claim 17, comprising determining the fluorescence emission as a function of temperature.
30. A method for the determination of the melting profile of a hybrid consisting of a target nucleic acid amplified according to claim 21 and said third oligonucleotide of claim 18, comprising determining the fluorescence emission as a function of temperature.
31. The method according to claims 28 or 29, further comprising monitoring fluorescence emission of the FRET donor entity in a first detector channel and fluorescence emission of the FRET acceptor entity in a second detector channel, and normalizing the fluorescence emission of said FRET acceptor entity by the fluorescence emission of said FRET donor entity.